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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,593	12/28/2001	Erwin Frederick Siegel	10004013	2882

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AGILENT TECHNOLOGIES
Legal Department, 51U-PD
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EXAMINER	
PATHAK, SUDHANSHU C	

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/035,593	SIEGEL ET AL.
	Examiner	Art Unit
	Sudhanshu C. Pathak	2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *November 29th, 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *November 28th, 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-to-14 are pending in the application.

Response to Arguments

2. Applicant's arguments regarding the (Prior Art rejections (102/103)) filed on November 29th, 2005 have been fully considered but they are not persuasive.

In regards to the arguments considering Claim 1 that the Adler reference does not teach thresholding the high frequency signal, this is disclosed in the Adler reference on (Page 2, lines 35-37 & Page 3, lines 8-12 & Page 4, lines 36-39 & Fig. 5) which discloses thresholding the detail coefficients (high (frequency) pass filter signals).

In regards to the arguments considering Claim 2, that Adler does not teach the limitations of Claim 1 and further there is no motivation to combine the Shark reference with the Adler reference. In regards to the argument regarding the limitations of claim 1 see above for further clarification. In regards to the motivation to combine the Adler reference and the Shark reference the examiner has provided motivation: Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Shark teaches a wavelet transformation on comprising a plurality of filter banks, wherein the analyzer filters are finite impulse response filters and this can be implemented in the analyzer (method) as described in Adler so as to avoid a long output for a short input signal thus satisfying the limitations of the claim.

In regards to the arguments considering Claim 3, that Adler does not teach the limitations of Claim 1. In regards to the argument regarding the limitations of claim 1 see above for further clarification. In regards to the Taswell reference Taswell discloses a method for reducing the noise on a measured signal called wavelet shrinkage denoising comprising the steps of forward wavelet transform, denoising and inverse wavelet transform (Specification, Page 12, right-column, lines 8-25 & Specification, Page 13, "A more precise definition") {Interpretation: Taswell discloses the measure signal to be "X(t)" which is wavelet transformed into "Y" which after denoising is inverse transformed into "S". Furthermore, wavelet transformation inherently implies transforming the received signal from the time domain into frequency domain (mathematical transformation) and then separating then decomposing the combined signal into multiple frequency bands}. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Taswell teaches performing a transformation of a measured signal so as to further separate the transformed signal into components, thus satisfying the limitations of the claims.

In regards to the arguments considering Claims 6 & 14 that Adler does not teach the limitations of Claim 1 and further that the threshold value in the Taswell reference can depend on the input data i.e. input signal and not the low frequency component signal. In regards to the argument regarding the limitations of claim 1 see above for further clarification. In regards to the argument that in the Taswell reference can depend on the input data i.e. input signal and not the low frequency

component signal this is incorrect. The input signal in the Taswell reference is "X(t)" and the threshold value depends on "U" (Specification, Page 13, "Variations on a theme" & Specification, Page 14) wherein "U" represents the data that was (is) to be transmitted (in the transmitter) (in a data-adaptive thresholding). This is the low frequency component in the receiver since the noise is the high frequency component signal that is thresholded and removed.

In regards to the arguments considering Claims 7, 9 & 11, that Adler does not teach the limitations of Claim 1 and that there is no motivation to combine the Taswell reference. In regards to the argument regarding the limitations of claim 1 see above for further clarification. In regards to the Taswell reference regarding the disclosure of a signal converter for generating an input signal from a measured signal Taswell discloses a method for reducing the noise on a measured signal called wavelet shrinkage denoising comprising the steps of forward wavelet transform, denoising and inverse wavelet transform (Specification, Page 12, right-column, lines 8-25 & Specification, Page 13, "A more precise definition") {Interpretation: Taswell discloses the measure signal to be "X(t)" which is wavelet transformed into "Y" which after denoising is inverse transformed into "S". Furthermore, wavelet transformation inherently implies transforming the received signal from the time domain into frequency domain (mathematical transformation) and then separating then decomposing the combined signal into multiple frequency bands}. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Taswell teaches performing a transformation of a

measured signal so as to further separate the transformed signal into components, thus satisfying the limitations of the claims. This reference explicitly shows the transformation from the time domain signal (measured) into the frequency domain signal (input), which is inherent in a wavelet transformation implementation.

In regards to the arguments considering Claims 4-5, 8 & 12-13 regarding to the teachings of Adler in view of Taswell and that AAPA does not provide the missing teachings. Regarding to the teachings of Adler in view of Taswell see above for further clarification. Regarding to the teaching of the AAPA reference discloses an input signal converter so as to generate a signal having amplitude determined by the logarithm of the input signal (Specification, Page 1, lines 17-31 & Specification, Page 2, lines 1-8). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA teaches implementing a input signal converter and this can be implemented in the waveform analyzer so as to provide a more useful display of the signals, thus satisfying the limitation of the claim. Furthermore, there is no criticality so as to process the input signal amplitude either in logarithm of the input signal or square of the input signal this is a matter of design choice, even though each mathematical operation may provide a specified benefit, the manipulation of the signal before processing is a matter of design choice depending on the benefit.

In regards to the arguments considering Claim 10 see above for further clarification.

3. Applicant's arguments regarding the (112 1st, Para.) filed on November 29th, 2005 have been fully considered and are persuasive. The rejection of claims 4-5 & 12-13 with respect to the above-specified rejection (112) has been withdrawn.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Adler et al. (Eliminate Signal Noise with Discrete Wavelet Transformation; Electronic Design, Design Application; September 5th, 2000; Pages 1-15 www.elecdesign.com/Articles/ArticleID/4695/4695.html).

Regarding to Claim 1, Adler discloses a filter (Figure 1) comprising an analyzer for generating a low-frequency component signal and a high-frequency component signal from an input signal (Figure 1, element "Decomposition" & Figure 3 & Specification, Page 1, lines 24-35 & Specification, Page 2, lines 8-10) {Interpretation: Adler discloses the low frequency component to be approximation coefficients and the high frequency component to be the detail coefficients}; a thresholding circuit for generating a processed high-frequency signal from said high-frequency component signal, said processed high-frequency signal having an amplitude of zero in those regions in which said high-frequency component signal has an amplitude that is less than a threshold value (Figure 2 & Figure 4 & Figure 5 & Figure 7 & Specification,

Page 2, lines 26-39 & Specification, Page 3, lines 8-12 & Specification, Page 4, lines 30-41); and a synthesizer for generating a filtered signal from inputs comprising said low-frequency component signal and said processed high-frequency, said filtered signal being identical to said input signal if said threshold value is zero (Figure 1, element "Reconstruction" & Figure 5 & Specification, Page 2, lines 3-12, 35-37).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adler et al. (Eliminate Signal Noise with Discrete Wavelet Transformation; Electronic Design, Design Application; September 5th, 2000; Pages 1-15 www.elecdesign.com/Articles/ArticleID/4695/4695.html) in view of Shark et al. (Wavelet-Like Filter Banks: Design and Some Application Results; Signal Processing Proceedings, 2000, WCCC-ICSP 2000. 5th International Conference on Volume 1, 21-25 Aug. 2000 Page(s): 315 – 320).

Regarding to Claim 2, Adler discloses a filter comprising an analyzer for generating a low frequency component signal and a high frequency component signal from an input signal; a thresholding circuit for generating a processed high-frequency signal from said high-frequency component signal, said processed high-frequency signal having an amplitude of zero in those regions in which said high-

frequency component signal has an amplitude that is less than a threshold value and a synthesizer for generating a filtered signal from inputs comprising said low-frequency component signal and said processed high-frequency, said filtered signal being identical to said input signal if said threshold value is zero as described above. Adler further discloses said analyzer comprising a plurality of filters (Figure 1, element "Decomposition" & Specification, Page 1, lines 24-35). However, Adler does not disclose the analyzer filters to be finite impulse response filters.

Shark discloses wavelet filter banks (Daubechies) comprising an analysis section to decompose the input signal by using two filters and a synthesis section to reconstruct the input signal again by using two filters (Abstract, Page 315 & Property Formulation, Page 315 & Fig. 1, Page 316). Shark further discloses the filters comprise a finite impulse response (FIR) filters (Property Formulation, Page 315 & Page 316, left-hand column). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Shark teaches a wavelet transformation on comprising a plurality of filter banks, wherein the analyzer filters are finite impulse response filters and this can be implemented in the analyzer (method) as described in Adler so as to avoid a long output for a short input signal thus satisfying the limitations of the claim.

8. Claims 3, 6-7, 9, 11 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adler et al. (Eliminate Signal Noise with Discrete Wavelet Transformation; Electronic Design, Design Application; September 5th, 2000; Pages 1-15 www.elecdesign.com/Articles/ArticleID/4695/4695.html) in view of

Taswell (The What, How, and Why of Wavelet Shrinkage Denoising; Computing in Science and Engineering; Vol. 2, No. 3; May/June 2000; Page 12-19).

Regarding to Claim 3, Adler discloses a filter comprising an analyzer for generating a low frequency component signal and a high frequency component signal from an input signal; a thresholding circuit for generating a processed high-frequency signal from said high-frequency component signal, said processed high-frequency signal having an amplitude of zero in those regions in which said high-frequency component signal has an amplitude that is less than a threshold value and a synthesizer for generating a filtered signal from inputs comprising said low-frequency component signal and said processed high-frequency, said filtered signal being identical to said input signal if said threshold value is zero as described above. However, Adler does not explicitly disclose input signal converter for generating said input signal from a measured signal by performing a mathematical transformation on said measured signal; and an inverse converter for applying the inverse mathematical transformation to said filtered signal to generate an output signal.

Taswell discloses a method for reducing the noise on a measured signal called wavelet shrinkage denoising comprising the steps of forward wavelet transform, denoising and inverse wavelet transform (Specification, Page 12, right-column, lines 8-25 & Specification, Page 13, "A more precise definition") {Interpretation: Taswell discloses the measure signal to be "X(t)" which is wavelet transformed into "Y" which after denoising is inverse transformed into "S". Furthermore, wavelet transformation inherently implies transforming the received signal from the time domain into

frequency domain (mathematical transformation) and then separating then decomposing the combined signal into multiple frequency bands}. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Taswell teaches performing a transformation of a measured signal so as to further separate the transformed signal into components, thus satisfying the limitations of the claims.

Regarding to Claims 6 & 14, Adler discloses a filter comprising an analyzer for generating a low frequency component signal and a high frequency component signal from an input signal; a thresholding circuit for generating a processed high-frequency signal from said high-frequency component signal, said processed high-frequency signal having an amplitude of zero in those regions in which said high-frequency component signal has an amplitude that is less than a threshold value and a synthesizer for generating a filtered signal from inputs comprising said low-frequency component signal and said processed high-frequency, said filtered signal being identical to said input signal if said threshold value is zero as described above. However, Alder does not disclose the threshold value depending on the amplitude of the low-frequency signal component.

Taswell discloses a method for reducing the noise on a measured signal called wavelet shrinkage denoising comprising the steps of forward wavelet transform, denoising and inverse wavelet transform (Specification, Page 12, right-column, lines 8-25 & Specification, Page 13, "A more precise definition"). Taswell further discloses the threshold value depends on the amplitude of the low-frequency signal

component (Specification, Page 13, "Variations on a theme" & Specification, Page 14). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Taswell teaches implementing a data-adaptive threshold so and this can be implemented in the apparatus and method as described in Alder so as to more accurately remove only the noise and not a low amplitude data signal in the denoising process, thus satisfying the limitation of the claim.

Regarding to Claims 7, 9 & 11, Adler discloses a filter comprising a first and second thresholding filters <u>each</u> further comprising (Figure 1 & Specification, Page 1, lines 24-35) {<u>Interpretation:</u> Alder discloses a multiple chain of decomposition and reconstruction of the measured signal as described in Fig. 1 i.e. the figure discloses a two level decomposition wherein the first decomposition the input signal is decomposed into a low-frequency component and a high frequency component and then in the second decomposition the low-frequency component is further decomposed into another low frequency component and another high frequency component so that an input signal is broken down into multiple high-frequency and low-frequency components} an analyzer for generating a low-frequency component signal and a high-frequency component signal from an input signal (Figure 1, element "Decomposition" & Figure 3 & Specification, Page 1, lines 24-35 & Specification, Page 2, lines 8-10) {<u>Interpretation</u>: Adler discloses the low frequency component to be approximation coefficients and the high frequency component to be the detail coefficients}; a thresholding circuit for generating a processed high-frequency signal from said high-frequency component signal, said processed high-

frequency signal having an amplitude of zero in those regions in which said high-frequency component signal has an amplitude that is less than a threshold value (Figure 2 & Figure 4 & Figure 5 & Figure 7 & Specification, Page 2, lines 26-39 & Specification, Page 3, lines 8-12 & Specification, Page 4, lines 30-41); and a synthesizer for generating a filtered signal from inputs comprising said low-frequency component signal and said processed high-frequency, said filtered signal being identical to said input signal if said threshold value is zero (Figure 1, element "Reconstruction" & Figure 5 & Specification, Page 2, lines 3-12, 35-37). However, Adler does not explicitly disclose input signal converter for generating said input signal from a measured signal by performing a mathematical transformation on said measured signal; and an inverse converter for applying the inverse mathematical transformation to said filtered signal to generate an output signal.

Taswell discloses a method for reducing the noise on a measured signal called wavelet shrinkage denoising comprising the steps of forward wavelet transform, denoising and inverse wavelet transform (Specification, Page 12, right-column, lines 8-25 & Specification, Page 13, "A more precise definition") {Interpretation: Taswell discloses the measure signal to be "X(t)" which is wavelet transformed into "Y" which after denoising is inverse transformed into "S". Furthermore, wavelet transformation inherently implies transforming the received signal from the time domain into frequency domain (mathematical transformation) and then separating then decomposing the combined signal into multiple frequency bands}. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention

that Taswell teaches performing a transformation of a measured signal so as to further separate the transformed signal into components, thus satisfying the limitations of the claims.

9. Claims 4-5, 8 & 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adler et al. (Eliminate Signal Noise with Discrete Wavelet Transformation; Electronic Design, Design Application; September 5th, 2000; Pages 1-15 www.elecdesign.com/Articles/ArticleID/4695/4695.html) in view of Taswell (The What, How, and Why of Wavelet Shrinkage Denoising; Computing in Science and Engineering; Vol. 2, No. 3; May/June 2000; Page 12-19) in further view of Applicant Admitted Prior Art (AAPA).

Regarding to Claims 4-5, 8 & 12-13, Adler in view of Taswell discloses a filter(s) each comprising an analyzer for generating a low frequency component signal and a high frequency component signal from an input signal; a thresholding circuit for generating a processed high-frequency signal from said high-frequency component signal, said processed high-frequency signal having an amplitude of zero in those regions in which said high-frequency component signal has an amplitude that is less than a threshold value; a synthesizer for generating a filtered signal from inputs comprising said low-frequency component signal and said processed high-frequency, said filtered signal being identical to said input signal if said threshold value is zero and a input signal converter for generating said input signal from a measured signal by performing a mathematical transformation on said measured signal; and an inverse converter for applying the inverse mathematical

transformation to said filtered signal to generate an output signal as described above. However, Alder in view of Taswell does not disclose the input signal converter to generate a signal having amplitude determined by the logarithm or the square of the input signal.

The Applicant Admitted Prior Art (AAPA) discloses an input signal converter so as to generate a signal having amplitude determined by the logarithm of the input signal (Specification, Page 1, lines 17-31 & Specification, Page 2, lines 1-8). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA teaches implementing a input signal converter and this can be implemented in the waveform analyzer so as to provide a more useful display of the signals, thus satisfying the limitation of the claim. Furthermore, there is no criticality so as to process the input signal amplitude either in logarithm of the input signal or square of the input signal this is a matter of design choice.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adler et al. (Eliminate Signal Noise with Discrete Wavelet Transformation; Electronic Design, Design Application; September 5th, 2000; Pages 1-15 www.elecdesign.com/Articles/ArticleID/4695/4695.html) in view of Taswell (The What, How, and Why of Wavelet Shrinkage Denoising; Computing in Science and Engineering; Vol. 2, No. 3; May/June 2000; Page 12-19) in further view of Shark et al. (Wavelet-Like Filter Banks: Design and Some Application Results; Signal Processing Proceedings, 2000, WCCC-ICSP 2000. 5th International Conference on Volume 1, 21-25 Aug. 2000 Page(s): 315 – 320).

Regarding to Claim 10, Adler in view of Taswell discloses a filter comprising a first and second thresholding filters each further comprising an analyzer for generating a low frequency component signal and a high frequency component signal from an input signal; a thresholding circuit for generating a processed high-frequency signal from said high-frequency component signal, said processed high-frequency signal having an amplitude of zero in those regions in which said high-frequency component signal has an amplitude that is less than a threshold value; a synthesizer for generating a filtered signal from inputs comprising said low-frequency component signal and said processed high-frequency, said filtered signal being identical to said input signal if said threshold value is zero and a input signal converter for generating said input signal from a measured signal by performing a mathematical transformation on said measured signal; and an inverse converter for applying the inverse mathematical transformation to said filtered signal to generate an output signal as described above. Adler further discloses said analyzer comprising a plurality of filters (Figure 1, element "Decomposition" & Specification, Page 1, lines 24-35). However, Adler does not disclose the analyzer filters to be finite impulse response filters.

Shark discloses wavelet filter banks (Daubechies) comprising an analysis section to decompose the input signal by using two filters and a synthesis section to reconstruct the input signal again by using two filters (Abstract, Page 315 & Property Formulation, Page 315 & Fig. 1, Page 316). Shark further discloses the filters comprise a finite impulse response (FIR) filters (Property Formulation, Page 315 &

Page 316, left-hand column). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Shark teaches a wavelet transformation on comprising a plurality of filter banks, wherein the analyzer filters are finite impulse response filters and this can be implemented in the analyzer (method) as described in Adler so as to avoid a long output for a short input signal thus satisfying the limitations of the claim.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. <u>Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.</u>

- If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Chieh M. Fan can be reached on (571)-272-3042

- The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.
- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sudhanshu C. Pathak

CHIEH M. FAN
SUPERVISORY PATENT EXAMINER